

ABSTRACT OF THE DISCLOSURE

A control system and method base on a model of a neurological structure such as the inferior olive of the brain. In one embodiment, individual inferior olive neurons are modeled in
5 hardware, such as in an integrated circuit, and interconnected to form an artificial inferior olive. The artificial inferior olive thus formed can be used in a universal movement control system. An exemplary system for controlling the operation of a six-legged walker is described. The degree of coupling between neurons can be varied. A model is also provided which mimics the interaction between neurons of the inferior olive, the cerebellar nuclei and Purkinje cells via
10 collateral axons. The model accurately describes the qualitative dynamics of cluster formation and spike-train generation in the olivo-cerebellar system. A universal control system (UCS) based on the olivo-cerebellar system is described.